

In the Claims:

Claims 1 to 20 (canceled).

1 21. (currently amended) Deployable structure with a modular
2 configuration consisting of at least one collapsible module
3 (91), which is bounded by joints (114, 115, 126, 121) of a
4 first joint set, which are corner joints of the module (91)
5 and lie in a first surface, and by joints (101, 102, 113,
6 108) of a second joint set, which are corner joints of the
7 module (91) and lie in a second surface, and with at least
8 one joint (109, 122) of a third joint set, which lies
9 outside of the first surface and is not located at a corner
10 of the module, whereby at least some of the joints of the
11 first and second joint sets respectively have a constrained
12 and fixable position relative to one another, ~~especially by~~
13 being ~~connectable~~ connected with one another[[7]] by a
14 guide mechanism comprising scissors arrangements,
15 characterized in that, one of the joints (109) of the third
16 joint set is connected respectively with at least two of
17 the joints (114, 115, 113, 121) selected from at least one
18 of the first and second joint sets by a respective
19 tension-only non-rigid connecting element (39, 41, 43, 45)
20 that is adapted and able to transmit only tension forces,
21 and said one of the joints of the third joint set is
22 arranged below ~~the~~ a lowermost joint (114, 115, 121) among
23 the joints of the first joint set with which said one of
24 the joints of the third joint set is connected, and

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25 characterized in that forces arising upon loading of the
26 structure by at least one of a useful working load and a
27 self-weight load are transmittable as tension forces away
28 from said one of the joints (109) of the third joint set to
29 the joints (114, 115, 113, 121) of at least one of the
30 first and second joint sets via the tension-only ~~non-rigid~~
31 connecting element (39, 41, 43, 45) that is adapted and
32 able to transmit only tension forces.

1 22. (previously presented) Structure according to claim 21,
2 characterized in that a joint (122) of the third joint set
3 is connected with at least one joint (101, 102, 113, 108)
4 of the second joint set by a connecting element (40, 42,
5 44, 46) that transmits tension and compression forces.

1 23. (previously presented) Structure according to claim 22,
2 characterized in that the at least two joints (114, 115,
3 113, 121) selected from at least one of the first and
4 second joint sets and the at least one joint (101, 102,
5 113, 108) of the second joint set are connected with a
6 common joint of the third joint set.

1 24. (previously presented) Structure according to claim 22,
2 characterized in that the at least two joints (114, 115,
3 113, 121) selected from at least one of the first and
4 second joint sets are connected with a first joint (109) of
5 the third joint set, and the at least one joint (101, 102,
6 113, 108) of the second joint set is connected with a

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7 second joint (122) of the third joint set, and in that the
8 first joint (109) of the third joint set is connected with
9 the second joint (122) of the third joint set by a
10 connecting element (11) that transmits compression and
11 tension forces.

1 25. (previously presented) Structure according to claim 21,
2 characterized in that at least one of the first surface and
3 the second surface is a respective plane.

1 26. (currently amended) ~~Structure according to claim 21,~~
2 Deployable structure with a modular configuration
3 consisting of at least one collapsible module (91), which
4 is bounded by joints (114, 115, 126, 121) of a first joint
5 set, which are corner joints of the module (91) and lie in
6 a first surface, and by joints (101, 102, 113, 108) of a
7 second joint set, which are corner joints of the module
8 (91) and lie in a second surface, and with at least one
9 joint (109, 122) of a third joint set, which lies outside
10 of the first surface, whereby at least some of the joints
11 of the first and second joint sets respectively have a
12 fixable position relative to one another by being
13 connectable with one another by a guide mechanism,
14 characterized in that, one of the joints (109) of the third
15 joint set is connected respectively with at least two of
16 the joints (114, 115, 113, 121) selected from at least one
17 of the first and second joint sets by a respective
18 tension-only connecting element (39, 41, 43, 45) that is

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19 adapted and able to transmit only tension forces, and said
20 one of the joints of the third joint set is arranged below
21 a lowermost joint (114, 115, 121) among the joints of the
22 first joint set with which said one of the joints of the
23 third joint set is connected, and characterized in that
24 forces arising upon loading of the structure by at least
25 one of a useful working load and a self-weight load are
26 transmittable as tension forces away from said one of the
27 joints (109) of the third joint set to the joints (114,
28 115, 113, 121) of at least one of the first and second
29 joint sets via the tension-only connecting element (39, 41,
30 43, 45) that is adapted and able to transmit only tension
31 forces, and further characterized in that all of the joints
32 (101, 102, 113, 108) of the second joint set, and said one
33 of the joints (109) of the third joint set, which is
34 connected with said at least two joints (114, 115, 113,
35 121) selected from at least one of the first and second
36 joint sets by the tension-only non-rigid connecting element
37 (39, 41, 43, 45), lie in one plane.

1 27. (currently amended) Structure according to claim 22,
2 Deployable structure with a modular configuration
3 consisting of at least one collapsible module (91), which
4 is bounded by joints (114, 115, 126, 121) of a first joint
5 set, which are corner joints of the module (91) and lie in
6 a first surface, and by joints (101, 102, 113, 108) of a
7 second joint set, which are corner joints of the module
8 (91) and lie in a second surface, and with at least one

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9 joint (109, 122) of a third joint set, which lies outside
10 of the first surface, whereby at least some of the joints
11 of the first and second joint sets respectively have a
12 fixable position relative to one another by being
13 connectable with one another by a guide mechanism,
14 characterized in that, one of the joints (109) of the third
15 joint set is connected respectively with at least two of
16 the joints (114, 115, 113, 121) selected from at least one
17 of the first and second joint sets by a respective
18 tension-only connecting element (39, 41, 43, 45) that is
19 adapted and able to transmit only tension forces, and said
20 one of the joints of the third joint set is arranged below
21 a lowermost joint (114, 115, 121) among the joints of the
22 first joint set with which said one of the joints of the
23 third joint set is connected, and characterized in that
24 forces arising upon loading of the structure by at least
25 one of a useful working load and a self-weight load are
26 transmittable as tension forces away from said one of the
27 joints (109) of the third joint set to the joints (114,
28 115, 113, 121) of at least one of the first and second
29 joint sets via the tension-only connecting element (39, 41,
30 43, 45) that is adapted and able to transmit only tension
31 forces, and further characterized in that a joint (122) of
32 the third joint set is connected with at least one joint
33 (101, 102, 113, 108) of the second joint set by a
34 connecting element (40, 42, 44, 46) that transmits tension
35 and compression forces, and all joints (114, 115, 126, 121)
36 of the first joint set and the joint (122) of the third

37 joint set, which is connected with at least one joint (101,
38 102, 113, 108) of the second joint set by a connecting
39 element (40, 42, 44, 46) that transmits tension and
40 compression forces, lie in one plane.

1 28. (currently amended) Structure according to claim 21,
2 characterized in that the scissors arrangements of the
3 guide mechanism comprises ~~comprise~~ guide means, and in that
4 at least one joint (114) of the first joint set of a first
5 corner of the module (91) especially arranged on [[the]] an
6 outer circumference perimeter of the structure is connected
7 by the guide means with a joint (102) of the second joint
8 set of a first neighboring corner of the module (91)
9 opposite the first corner and especially arranged on the
10 outer circumference perimeter of the structure, and a joint
11 (101) of the second joint set of ~~the~~ a second corner is
12 connected by the guide means with a joint (115) of the
13 first joint set of the a second neighboring corner opposite
14 the second corner.

1 29. (previously presented) Structure according to claim 28,
2 characterized in that the guide means comprise connecting
3 elements (15, 16) that transmit tension and compression
4 forces and that are crossed-over and pivotally connected
5 with one another.

1 30. (currently amended) Structure according to claim 29,
2 characterized in that the connecting elements (16, 32, 17,

3 20, 34, 21, 24, 36, 25, 28, 38, 29) that transmit tension
4 and compression forces and that lead to supports of the
5 structure have a greater load ~~capacity, especially capacity~~
6 and a larger diameter, than remaining ones of the
7 connecting elements (15, 31, 18, 19, 33, 22, 23, 35, 26,
8 27, 37, 30) of the guide means.

1 31. (previously presented) Structure according to claim 29,
2 characterized in that at least a portion of the connecting
3 elements (15, 16; 17, 18; up to 37, 38), which are
4 pair-wise crossed-over and pivotally connected with one
5 another and which transmit tension and compression forces,
6 are connected with one another offset from their center in
7 the longitudinal direction.

1 32. (previously presented) Structure according to claim 21,
2 characterized in that multiple modules (91, 92, 93, 94) are
3 arranged next to one another, and in that neighboring
4 modules comprise common joints.

1 33. (previously presented) Structure according to claim 21,
2 characterized in that the expansion of the module (91) or
3 the structure (90) is adjustable by an operating
4 arrangement.

1 34. (currently amended) Structure according to claim 33,
2 characterized in that the operating arrangement comprises
3 expansion and retraction ~~means, especially mechanisms~~

4 including an expansion cable and a retraction cable, which
5 are guided in the respective joints over deflection means
6 mechanisms and are preferably fixably operable on a common
7 joint (101).

1 35. (currently amended) Structure according to claim 34,
2 characterized in that the expansion cable (1) is guided in
3 the respective joints over deflection means, ~~especially~~
4 mechanisms including deflection rollers or deflection
5 saddles, with at least two different deflection radii.

1 36. (previously presented) Structure according to claim 34,
2 characterized in that the structure (90) can have a
3 pre-stress applied thereto by means of the operating
4 arrangement, and thereby the structure (90) takes on a
5 prescribable form in a loaded condition.

1 37. (previously presented) Structure according to claim 21,
2 characterized in that at least some of the joints selected
3 from at least one of the first joint set (114 to 121, 126),
4 the second joint set (101 to 108, 113), and the third joint
5 set (109 to 112, 122 to 125) are connectable by a membrane
6 in such a manner so that thereby an at least partially
7 closed outer surface of the first or second surface is
8 formed.

1 38. (currently amended) Structure according to claim 21,
2 characterized in that at least a portion of the joints (114

3 to 121, 126) of the first joint set and at least a portion
4 of the joints (122 to 125) of the third joint set are
5 connectable with at least one, ~~preferably triangular~~, one
6 triangular panel element (201 to 216) in such a manner so
7 that thereby an at least partially closed outer surface of
8 the first surface is formed.

1 39. (currently amended) Structure according to claim 22,
2 characterized in that the connecting elements that transmit
3 tension and compression forces are articulately joined on
4 the respective joints and are ~~especially~~ formed by rods of
5 aluminum.

1 40. (currently amended) ~~Structure according to claim 21,~~
2 Deployable structure with a modular configuration
3 consisting of at least one collapsible module (91), which
4 is bounded by joints (114, 115, 126, 121) of a first joint
5 set, which are corner joints of the module (91) and lie in
6 a first surface, and by joints (101, 102, 113, 108) of a
7 second joint set, which are corner joints of the module
8 (91) and lie in a second surface, and with at least one
9 joint (109, 122) of a third joint set, which lies outside
10 of the first surface, whereby at least some of the joints
11 of the first and second joint sets respectively have a
12 fixable position relative to one another by being
13 connectable with one another by a guide mechanism,
14 characterized in that, one of the joints (109) of the third
15 joint set is connected respectively with at least two of

16 the joints (114, 115, 113, 121) selected from at least one
17 of the first and second joint sets by a respective
18 tension-only connecting element (39, 41, 43, 45) that is
19 adapted and able to transmit only tension forces, and said
20 one of the joints of the third joint set is arranged below
21 a lowermost joint (114, 115, 121) among the joints of the
22 first joint set with which said one of the joints of the
23 third joint set is connected, and characterized in that
24 forces arising upon loading of the structure by at least
25 one of a useful working load and a self-weight load are
26 transmittable as tension forces away from said one of the
27 joints (109) of the third joint set to the joints (114,
28 115, 113, 121) of at least one of the first and second
29 joint sets via the tension-only connecting element (39, 41,
30 43, 45) that is adapted and able to transmit only tension
31 forces, and further characterized in that the tension-only
32 non-rigid connecting elements that are adapted and able to
33 transmit only tension forces are attached, especially
34 attached by being articulately joined, joined on the
35 respective joints, and at least partially are formed by
36 respectively two parallel extending wires or cables of
37 steel.

1 41. (currently amended) Structure according to claim 21,
2 wherein each said tension-only non-rigid connecting element
3 comprises at least one wire or cable that is adapted and
4 able to transmit only tension forces.

1 42. (currently amended) A deployable structure having a modular
2 configuration including at least one collapsible module,
3 wherein each said module comprises:

4 first joints located at first corners of said module
5 and lying in a first surface;

6 second joints located at second corners of said module
7 and lying in a second surface;

8 a third joint that is distinct from said first and
9 second joints and is not located at a corner of said
10 module, and that is displaced from said first surface on a
11 side of said first surface facing toward said second
12 surface;

13 a guide mechanism comprising scissors arrangements
14 ~~that is~~ connected to at least some joints of said first and
15 second joints so as to selectively constrain and fix a
16 position of said some joints relative to one another; and

17 at least ~~one non-rigid limp~~ two tension-only
18 ~~connecting element~~ elements that ~~[[is]]~~ are each adapted
19 and able to transmit only tension forces, and that ~~connects~~
20 connect said third joint respectively with at least two
21 selected joints including at least one of said first joints
22 and at least one further joint among said first and second
23 joints;

24 wherein said at least ~~one non-rigid limp~~ two
25 tension-only ~~connecting element is~~ elements are arranged
26 and adapted so that load forces acting on said structure
27 are transmitted as purely tension forces from said third

28 joint to said at least two selected joints via said at
29 least ~~one non-rigid limp~~ two tension-only connecting
30 ~~element.~~ elements.

1 43. (previously presented) The deployable structure according
2 to claim 42, wherein said at least two selected joints
3 include at least one of said first joints and at least one
4 of said second joints.

1 44. (currently amended) The deployable structure according to
2 claim 42, wherein said at least two selected joints include
3 three of said first joints and one of said second joints,
4 and wherein said at least ~~one non-rigid limp~~ two
5 tension-only connecting ~~element includes~~ elements include
6 four said ~~non-rigid limp~~ tension-only connecting elements
7 respectively connecting said third joint with said three
8 first joints and said one second joint.

1 45. (currently amended) The deployable structure according to
2 claim 42, wherein each said ~~non-rigid limp~~ tension-only
3 connecting element respectively comprises at least one wire
4 or cable that is adapted and able to transmit only tension
5 forces.

1 46. (currently amended) The deployable structure according to
2 claim 42, wherein each said ~~non-rigid limp~~ tension-only
3 connecting element respectively comprises two wires or
4 cables that are arranged and extend parallel to one

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5 another, and that are adapted and able to transmit only
6 tension forces.

1 47. (currently amended) The deployable structure according to
2 claim 42, further comprising:

3 a fourth joint that is distinct from said first,
4 second and third joints and that is displaced from said
5 second surface on a side of said second surface facing
6 toward said first surface;

7 and

8 at least one connecting rod that is adapted and able
9 to transmit both tension forces and compression forces, and
10 that connects said fourth joint respectively with at least
11 one of said second joints.

1 48. (currently amended) The deployable structure according to
2 claim 47, wherein each said ~~non-rigid-limp~~ tension-only
3 connecting element respectively comprises two wires or
4 cables that are arranged and extend parallel to one
5 another, and that are adapted and able to transmit only
6 tension forces, and wherein said connecting rod
7 respectively crosses and extends between said two wires or
8 cables of a respective one said ~~non-rigid-limp~~ tension-only
9 connecting element.

[RESPONSE CONTINUES ON NEXT PAGE]